

Smoothing relief

Runway resurfacing at Kennedy Space Center is expected to reduce tire wear, expand landing limits. Story on Page 3.



Halloween howl

Tickets go on sale for the Employee Activities Association's Halloween Dinner and Dance. Story on Page 4.

Space News Roundup

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NASA Electronic Photo

STS-64 Mission Specialist Mark Lee floats freely above *Discovery's* payload bay in the first test of the Simplified Aid for EVA Rescue jetpack last Friday. It was the first untethered space walk by an American in a decade.

Jetpack works 'like a champ' for space walk

The first two untethered space walkers in a decade are back at JSC, where designers conceived and built the emergency jetpack that worked precisely as advertised last Friday.

The space walk by Mission Specialists Mark Lee and Carl Meade was the visual highlight of the 11-day mission that ended Tuesday with a smooth landing in California.

"This thing works like a champ," Lee told Meade as he maneuvered the Simplified Aid for EVA Rescue backpack in above *Discovery's* payload bay during a 6 hour, 51 minute space walk.

Lee and Meade exited the airlock mid-morning Friday and conducted

that SAFER could help an astronaut in distress return safely to the shuttle, Meade and Lee sent each other tumbling away from the shuttle. First, Lee fired SAFER's rockets to stabilize the tumble and then flew back to Meade standing on the robot arm. Later, Lee returned the favor, telling Meade that "since there's no baseball, I guess I'll have to catch you," as Meade flew back toward the shuttle following his demonstration run with the SAFER.



By carefully conserving power aboard the shuttle, *Discovery* Commander Dick Richards, Pilot Blaine Hammond, and Mission Specialists Jerry Linenger, Susan Helms, Lee and Meade were able to buy a bonus day of science

activities. *Discovery's* primary payload on this mission, the Lidar In-Space Technology Experiment performed flawlessly throughout the mission delighting the ground-based researchers. The LITE payload emitted close to 2 million laser pulses during 53 hours of lasing operations. By sending out short bursts of light and measuring the amount of light reflected back by the atmosphere, the LITE payload provided extremely high-resolution images of storm systems, dust clouds, pollution and stratospheric aerosols, and biomass burning. LITE flew directly over the eye of Super Typhoon Melissa taking a "picture" of the eye of the storm and cloud tops over the ocean. LITE

several evaluation tests of SAFER's capabilities. SAFER, designed by an Automation and Robotics Division team lead by Cliff Hess, attaches to the life support backpack on an EVA suit and uses bursts of nitrogen gas to allow an astronaut to safely return to the shuttle in the event he or she becomes detached from a safety tether while conducting a space walk. It is intended for use only in emergencies when a space walker becomes untethered and a shuttle is unable or unavailable to fly to the rescue.

Both astronauts tested the SAFER systems by flying in a boxed-shape envelope within *Discovery's* cargo bay. Then, each flew along the length of the shuttle's extended robot arm to demonstrate SAFER's precision flying capabilities. Finally, in a test designed to show

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Please see **DISCOVERY**, Page 4

Endeavour to launch Sept. 30

NASA managers are targeting Sept. 30 for the launch of the Space Shuttle *Endeavour* and its primary payload, the Space Radar Laboratory-2.

The launch countdown begins at 10 a.m. Tuesday. The 2-1/2-hour launch window opens at 6:16 a.m. CDT.

SRL, which first flew last April, will again give scientists highly detailed information that will help them distinguish between human-induced environmental changes and other natural forms of change. The SRL science team will compare SRL-2 data to SRL-1 data to study changes in the environment between spring and autumn.

The STS-68 crew—Commander Mike Baker, Pilot Terry Wilcutt, Payload Commander Tom Jones, and



Mission Specialists: Steve Smith, Dan Bursch and Jeff Wisoff—will travel to Kennedy Space Center on Sept. 27 to begin final preparations for launch.

Endeavour, whose three main engines were replaced following an unsuccessful launch attempt on Aug. 18, will be making its seventh flight—the 65th of the shuttle Program.

Atlantis is next up, with the STS-66 mission scheduled for launch in early November.

STS-66 will feature the third flight of the Atmospheric Laboratory for Applications and Science payload and CRISTA-SPAS. *Atlantis* is in the Orbiter Processing Facility, undergoing final preparations for roll over to the Vehicle Assembly Bldg.

Maldonado to speak on Hispanic heritage

Tickets for Gilruth Center luncheon will be on sale until Wednesday

Port of Houston Authority Commissioner Betti Maldonado will be the keynote speaker for JSC's observance of National Hispanic Heritage Month.

The observance, fashioned around the theme of "Hispanic Vision—Future Challenges and Opportunities," began Sept. 15 and continues through Oct. 4. Maldonado will speak at a luncheon at 11:30 a.m. Oct. 4 in the Gilruth center ballroom. Maldonado is the owner of

Maldonado Consulting, a public relations firm that specializes in providing outreach to the Hispanic community. She became the country's first Hispanic female to serve on a port authority in May 1994, and her confirmation by the Houston City Council also made her the first Hispanic woman to serve on the Houston Port Authority. She is chair-elect of the Houston Hispanic Chamber of Commerce.

Maldonado has worked closely

with Houston Mayor Bob Lanier on projects ranging from door-to-door Hispanic voter registration to Hispanic art awareness. She has taken an active role in promoting the North American Free Trade Agreement, serving as the City of Houston's NAFTA liaison.

In 1994, Maldonado was named one of Houston's 10 "Women on the Move" by the Houston Post, and a national member of the year by the U.S. Hispanic Chamber Commerce.

All JSC civil servants and contractors are invited. Tickets are \$10 each, and must be purchased by Wednesday. For more information, call Hispanic Employment Program Manager Lupita Armendariz at x30604, or Hispanic Advisory Committee members Joe Olivarez, x34022; Libby Salas, x38608; Melissa Villegas Drake, x36775; Richard Garza, x33356; Linda Riviera, x30136; Mike Ruiz, x38169; or Ruben Zavala, x33765.



Betti Maldonado

Mars Pathfinder rover will explore rocky plain

Mars Pathfinder, one of the first in a new generation of small, low cost spacecraft, will land on an ancient flood plain on Mars in 1997.

Eons ago, when water flowed on Mars, great floods inundated the landing site, located on a rocky plain in an area known today as Ares Vallis. The site is 527 miles southeast of the location of Viking Lander 1, which in 1976 became the first spacecraft to land on Mars. Pathfinder will be the first spacecraft to land on Mars since the twin Viking landers arrived almost 20 years ago.

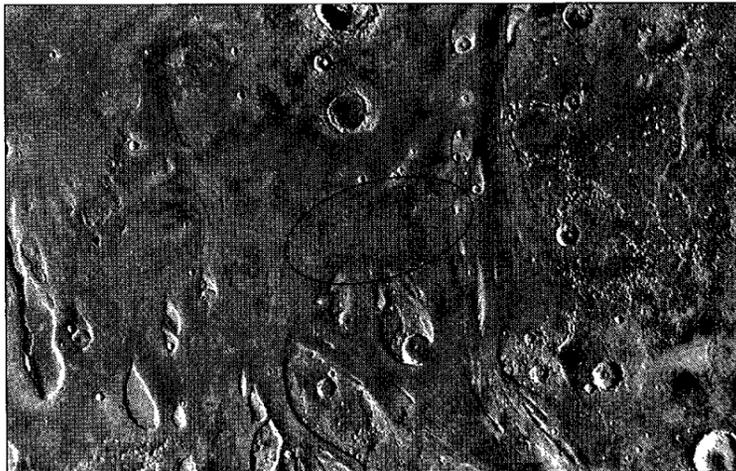
The spacecraft, scheduled to arrive at Mars on July 4, 1997, will

parachute down to Ares Vallis at the mouth of an ancient outflow channel chosen for the variety of rock and soil samples it may present.

The purpose of the new Pathfinder mission is to demonstrate an inexpensive system for cruise, entry, descent and landing on Mars, said Project Manager Anthony Spear and Project Scientist Dr. Matthew Golombek of NASA's Jet Propulsion Laboratory.

The lander, carrying a microrover, will aerobrake in the upper Martian atmosphere using an aeroshell and a parachute. Just before impact,

Please see **MARS**, Page 4



NASA Photo

Mars Pathfinder will land within a 60- by 120-mile ellipse around the targeted site on a rocky plain in an area known today as Ares Vallis, 527 miles southeast of the location of Viking Lander 1.

Magellan executes 'windmill' as mission draws to close

NASA's Magellan probe is finishing a unique experiment designed to return data about the upper atmosphere of Venus and the behavior of a spacecraft entering it.

The experiment marks the beginning of final activities for the spacecraft, which is expected to burn up in the atmosphere of Venus by Oct. 14.

"This is the next to last act of a truly magnificent performance by Magellan and its science and operations teams," said Dr. Wesley T. Huntress, associate administrator for space science at NASA Headquarters. "Magellan has far surpassed expectations." Please see **MAGELLAN'S**, Page 4

JSC

Ticket Window

The following discount tickets are available for purchase in the Bldg. 11 Exchange Store from 10 a.m.-2 p.m. Monday-Thursday and 9 a.m.-3 p.m. Friday. For more information, call x35350 or x30990.

Renaissance Festival: Festival runs from first weekend in October to second weekend in November. Cost is \$10.50 adults; \$5.25 child (7-12).

Seaworld of Texas: Discount tickets: adult \$20.95; child (3-11), \$14.25.

Fiesta Texas: Discount tickets: adult \$18.95; child (4-11) and seniors (55+), \$14.25.

Astroworld: Discount tickets: adult \$13.75.

Moody Gardens: Discount tickets for two of three different attractions: \$9.50

Space Center Houston: Discount tickets: adult, \$8.75; child (3-11), \$7.10; commemorative, \$9.55.

Metro tickets: Passes, books and single tickets available.

Movie discounts: General Cinema, \$4.75; AMC Theater, \$4; Loew's Theater, \$4.75.

Stamps: Book of 20, \$5.80

Upcoming Events: Deep Sea Fishing Trip, Oct. 1; Texas Renaissance Festival Bus Trips, Oct. 15 & Oct. 29; Halloween Dance & Children's Halloween Party, Oct. 29; Travel Fair, Nov. 1.

JSC history: *Suddenly, Tomorrow Came: A History of the Johnson Space Center*, \$11.

JSC

Gilruth Center News

Sign up policy: All classes and athletic activities are first come, first served. Sign up in person at the Gilruth Center and show a NASA badge or yellow EAA dependent badge. Classes tend to fill up two weeks in advance. Payment must be made in full, in exact change or by check, at the time of registration. No registration will be taken by telephone. For more information, call x30304.

EAA badges: Dependents and spouses may apply for photo identification badges from 7 a.m.-9 p.m. Monday-Friday; and 8 a.m.-4 p.m. Saturdays. Dependents must be between 16 and 23 years old.

Weight safety: Required course for employees wishing to use the weight room is offered from 8-9:30 p.m. Oct. 6 and 19. Pre-registration is required. Cost is \$5.

Defensive driving: Course is offered from 8:15 a.m.-3 p.m. Saturday. Next class is Aug. 15. Cost is \$19.

Aerobics: High/low-impact class meets from 5:15-6:15 p.m. Tuesdays and Thursdays. Cost is \$32 for eight weeks.

Exercise: Low-impact class meets from 5:15-6:15 p.m. Mondays and Wednesdays. Cost is \$24 for eight weeks.

Aikido: Martial arts class meets from 5-7 p.m. Tuesdays and Wednesdays. Cost is \$25 per month. New classes begin the first of each month.

Country dancing: Beginners class meets from 7-9 p.m.; advanced class meets from 8:30-10 p.m. Partners are required. For additional information, contact the Gilruth Center at x33345.

Golf Lessons: Lessons for all levels. Cost is \$90 for six weeks. For additional information, contact x33345.

Sailing Club: Intermediate sailing classes will be held on Saturdays, Oct. 1 and Oct. 15. For additional information, contact Richard Hoover at x31360, or 996-7716.

Tennis: Anyone interested in participating in a Fall Tennis League should contact the Gilruth Center staff at x33345.

Fitness program: Health Related Fitness Program includes a medical examination screening and a 12-week individually prescribed exercise program. For more information, call Larry Wier at x30301.

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Dates & Data

Today

Cafeteria menu — Special: baked meatloaf. Total Health: light macaroni and cheese. Entrees: baked scrod with Hollandaise, broiled chicken, pork and beef egg rolls, steamed fish, Reuben sandwich. Soup: seafood gumbo. Vegetables: stewed tomatoes, seasoned spinach, cut corn, macaroni and cheese.

Monday

Cafeteria menu — Special: Italian cutlet. Total Health: roast beef au jus. Entrees: chicken a la king, enchiladas with chili, baked lasagna with meat, steamed fish, French dip sandwich. Soup: split pea and ham. Vegetables: Brussels sprouts, oriental vegetables, buttered carrots, lima beans.

Tuesday

Variable schedule training — Variable Day Schedule training classes will be available for employees who have missed a training session from 1-3 p.m. Sept. 27 in Bldg. 1, Rm. 966. For more information, contact Human Resources.

Toastmasters meet — The Spaceland Toastmasters meets at 7 a.m. Sept. 28 at House of Prayer Lutheran Church on Bay Area Blvd. For additional information, contact Darrell Boyd, x36803.

Cafeteria menu — Special: stuffed cabbage rolls. Total Health: roasted turkey. Entrees: turkey and dressing, country style steak and hash browns, beef ravioli, baked chicken, French dip sandwich. Soup: tomato Florentine. Vegetables: Italian blend, okra and tomatoes, corn cobbette, navy beans.

Wednesday

Astronomy seminar — The JSC Astronomy Seminar will meet at noon Sept. 28 in Bldg. 31, Rm. 129. A brown-bag session on the 20th anniversary meeting of the seminar will feature part 1 of a videotape of

Karl Henize on Mt. Everest. For more information, call Al Jackson at 333-7679.

Cafeteria menu — Special: pepper steak. Total Health: stir fry pork with rice. Entrees: liver and onions, catfish and hush puppies, stir-fry pork with rice, steamed fish, Reuben sandwich. Vegetables: steamed broccoli, yellow squash, macaroni and cheese, vegetable sticks.

Thursday

Cafeteria menu — Special: chicken fried steak. Total Health: fat-free vegetable soup. Entrees: beef tacos, scrod with Hollandaise sauce, steamed fish, French dip sandwich. Soup: navy bean. Vegetables: spinach, cut corn, breaded okra, pinto beans.

Friday

Hispanic heritage — JSC's observance of National Hispanic Heritage Month will include a luncheon at 11:30 a.m. Oct. 4 in the Gilruth Center ballroom. Commissioner Betti Maldonado, Port of Houston Authority, will be the keynote speaker. Tickets are \$10 each, and must be purchased by Sept. 28. For more information, call Hispanic Employment Program Manager Lupita Armendariz at x30604.

Variable schedule training — Variable Day Schedule training classes will be available for employees who have missed a training session from 1-3 p.m. Sept. 30 in Bldg. 1, Rm. 966, and Bldg. 4S, Rm. 4419. For more information, contact Human Resources.

IMAX movie — Space Center Houston will host special showings of "Destiny in Space" at 7, 8 & 9 p.m. Cost is \$5 for adults, \$4 for children age 3-11 years and adults over 65 years. For additional information, contact Space Center Houston, 244-2100.

Cafeteria menu — Special: tuna

noodle casserole. Total Health: steamed salmon steak. Entrees: steamed salmon steak, roast beef, baked chicken, steamed fish, Reuben sandwich. Soup: seafood gumbo. Vegetables: French cut green beans, cauliflower with cheese, green peas, black-eyed peas.

Oct. 5

Astronomy seminar — The JSC Astronomy Seminar will meet at noon Oct. 5 in Bldg. 31, Rm. 129. A brown-bag session on the 20th anniversary meeting of the seminar will feature part 2 of a videotape of Karl Henize on Mt. Everest. For more information, call Al Jackson at 333-7679.

Toastmasters meet — The Spaceland Toastmasters meets at 7 a.m. Oct. 5 at House of Prayer Lutheran Church on Bay Area Blvd. For additional information, contact Darrell Boyd, x36803.

Oct. 7

IMAX movie — Space Center Houston will host special showings of "Destiny in Space" at 7, 8 & 9 p.m. Cost is \$5 for adults, \$4 for children age 3-11 years and adults over 65 years. For more information, contact Space Center Houston, 244-2100.

Oct. 10

Columbus Day — Most JSC offices will be closed in observance of the Columbus Day Holiday.

Oct. 12

PSI meets — The Clear Lake/NASA Area chapter of Professional Secretaries International meets at 5:30 p.m. Oct. 12 at the Holiday Inn on NASA Road 1. For additional information, contact Elaine Kemp, x30556 or Diana Peterson, x33077.

Toastmasters meet — The Spaceland Toastmasters meets at 7 a.m. Oct. 12 at House of Prayer Lutheran Church on Bay Area Blvd. For additional information, contact Darrell Boyd, x36803.

Swap Shop

Swap Shop ads are accepted from current and retired NASA civil service and on-site contractor employees. Each ad must be submitted on a separate full-sized, revised JSC form 1452. Deadline is 5 p.m. every Friday, two weeks before the desired date of publication. Ads may be run only once. Send ads to Roundup Swap Shop, Code AP3, or deliver them to the deposit box outside Rm. 147 in Bldg. 2. No phone or fax ads accepted.

Property

Sale: Jamaica Beach, 60 x 135 lot, includes boat slip, great site for invest or home, \$5k OBO. x30228 or 486-4762.

Lease: House, San Jacinto College South campus area, 3-1-1, \$450/mo. Minh, x37492 or 484-2456.

Sale: Sterling Knoll, 3-2-2, approx 1300 sq ft, pool, FPL, extras, \$69.9k. 486-9760.

Lease: Clear Lake/Bay Glen, 2 story, 4-2.5-2, MBR down, cul-de-sac, both formal, \$1250/mo avail Oct. 486-0804.

Lease: Near NASA 1, 2 story duplex townhouse, 2-2.5-1, 1500 sq ft, FPL, lg master BR, fenced patio. 452-3361.

Sale/Lease: University Trace condo, 2-2, completely redecorated, FPL, W/D, refrig, covered parking, \$565/mo. 488-5092.

Lease: Clear Lake condo, lg 2 BR, new paint inside/out, ceiling fans, W/D connections, pool, water paid, \$460/mo + dep. 326-6537.

Sale/Lease: Freeway Manor, 3-1.5-1, new central air & heat, new carpet/dishwasher, new garage door & ceiling fans, \$540/mo + dep or \$42k. Bill, 332-3649.

Lease: Townhome University Green, 3-2.5-2, ex cond, new carpet & paint, \$875/mo. 280-8155.

Sale: Baywind II condo, 1-1, new carpet/paint, W/D, refridg, DW, FPL, near pool, \$24k. x49625.

Lease: Condo, 1 BR, Seawall, Galveston, 6 mo lease min, fully furnished, 24 hr security, \$395/mo. x30737.

Sale: Mobil home, 3-2, parked in San Leon, you move. \$12k as is. x38138.

Sale: Baywind condo, 1 BR, W/D connections, 1st floor, FPL & kitchen appliances, located at Saturn & Bay Area, \$28.9k owner finance possible. Charli, 488-8102.

Sale: Vacation package, 9 days to Bahamas & Florida, includes hotel & cruise, must complete travel by 03/95,

\$398. Elizabeth, x49656.

Rent: Galveston condo, furnished, Seawall Blvd & 61st St, sleeps 6, wknd/wkly/dly rates. Magdi Yassa, 333-4760 or 486-0788.

Cars & Trucks

'87 Shelby Charger, 2.2L Turbo, 5 spd, 47k mi, \$2.8k OBO. 333-6691.

'86 Ford van, 62k mi, ex cond, \$7.5k. x30122 or x48199.

'70 Datsun 2000 Roadster, bright yellow, restored, ex cond, recent upgrades, garaged, \$3.9k. John, x46265 or 326-4216.

'88 Pontiac Sunbird GT Turbo convertible, 39k mi, good condition, pwr windows/locks, new top, \$6,750. x35359 or 282-2829.

'86 Toyota Celica GT, liftback, auto, new tires/battery/struts, good cond, \$3.5k. Tom, x40048 or 992-2166.

'88 Lincoln T-Car, 79k mi, \$6.3k OBO; '88 Nissan Sentra, red, 2 dr, A/C, cassette, 92k mi, stick, \$2.5k OBO. Walt, x47392.

'92 Hyundai Scoupe, ex cond, auto, A/C, pwr steering/brakes/windows, alarm, stereo cassette, sunroof, alloy wheels, \$7.5k. x39019 or 332-3196.

'79 Dodge pickup, auto, eng 318, good, no A/C or radio, min rust, \$500. 534-2851.

'92 Ford Explorer Sport, 2 dr, under warranty, 30k mi, excellent condition, loaded, deep emerald green, \$14k OBO. x37135.

'89 Ford Ranger XLT ext cab PU, 4 cyl, 5 spd, A/C, P/S & P/B, stereo cass, mags, ex cond, \$4,750. x38393 or 992-4703.

Cycles

'79 Honda CX500 motorcycle, drive-shaft & water cooled, good condition, \$750. Rusty, x35589 or 474-9140.

535cc, low mileage, \$5k cash. Connie, 236-8013.

Audiovisual & Computers

Magnavox 1 disc CD player with remote and all connecting cables, excellent condition, \$50. Elizabeth, x49656.

250W stereo speakers; Phase Linear studio monitors, still in box, new \$300 sell \$200. x448120.

IBM PS 2 model 30, w/color monitor, IBM PRO Printer XL, \$400. 280-2171.

Graphics Accelerator Video Card w 2MB VRAM, \$160; Intel Overdrive

Processor (ODP); for 486SX/DX 25/33 (169 Pin), \$240/both unused. 707-2584 voice/beeper.

AST color notebook, 386 SX-25, 4MB RAM, 60MB HD, 1.44MB FD, fax modem, DOS, Windows, carry case, \$950 OBO; new Canon BJ-105SX portable bubble jet printer, \$190. Kelley, x36818 or 488-8194.

Computer keyboard drawer, metal, \$25. 282-3121 or 879-7624.

HP Desk Jet 500 printer, 1 yr old, with cables, \$200. Jeff, x48723.

Photography

Sony Handy Cam Video camera, 8mm, with case, 2 batteries, cost \$1.5k sell \$400. 280-2171.

Musical Instruments

Boston Upright piano, \$475; Phillips CD Interactive w/Bernstein Bears & Richard Scarry's Busiest Neighborhood CD's, \$250. x38484 or 334-4124.

Electric organ/Piano and stool, with lots of music books, cartiriges included, excellent condition, \$200. x37220.

Percussion Plus snare drum with stand, chrome, never used, \$100. 488-2283.

Pets & Livestock

Boxer-mix puppies, 3 months old. 991-0821.

Household

Magnavox 19 inch color TV, \$100. Vicky, x32395 or 481-5306.

Excutive walnut desk, \$400. 280-2171.

Childcraft crib/junior bed and crib sheets, \$250; Fisher Price playpen, \$50. Irene, x39043 or 480-9812.

Barometer, 3-gage, \$10; antique frame with mirror, \$35; antique 8-day Sessions cathedral mantle clock, \$225; small portable electric heater, \$15; 2-small desk electric fans, \$10/both. 488-5564.

Queen bedsprads, like new, ex quality, \$45. Mark, x38013 or 992-4132.

Bernhardt dining tabling with light buffet, 6 chairs plus large leaf, new \$2.6k sell \$650; 2 bambo swivel rockers, \$50/ ea. 996-9620.

Futon couch/double bed, ex cond, extra thick mattress, light green cover, purchased from The Futon Company, \$200. 992-9617.

Zenith 25" color console TV w/remote, \$310 OBO; 4 head VHS w/remote, \$140 OBO; microwave oven, \$130 OBO. Walt,

x47392.

China cabinet, \$500; country blue 6' sofa, newly recovered, \$275. 996-9690.

Desk, 5', 4 drawers, light colored, \$30. Shelley, x37824.

Queen size sofa bed, you pick up, forest green and floral print, bambo edging, \$50. x38138.

Sectional sofa, with 2 recliners, 6 pieces, tan, excellent condition, \$650. Karen, x47931 or 488-0056.

Wanted

Want personnel to join VPSI vanpool, West Loop Park & Ride lot at 6:55 am to NASA/ contractors. Richard Heeterds, x37557 or Ed Rangel, x36124.

Want NASA publication SP-480 "Far Travelers" or any "SP" publications. Ron, 333-6952 or 482-1385.

Want roommate M/F, share 4-2-2 in Friendswood, non-smokers, long or short term ok, \$325/mo + 1/2 util. Karen, x37389 or 992-3783.

Want housemates, M/F, to share 4 bedroom house with pool. 286-7227.

Want inexpensive refrigerator for garage use, 3-wheeled jogging stroller. Jeff, x38424 or 992-9571.

Want non-smoking responsible person to rent room 5 minutes from NASA, \$300/mo, utilities included. 480-3424.

Want used scuba regulators, BC5, tanks, x30003.

Want female roommate(s) for Clear Lake area, starting around Nov 1, non-smokers only. Kathy, 683-8589.

Want cello instrument for orchestra, ASAP, in good condition. Becky, x36530 or Mary Ann Salinas, 941-3810.

Want roommates to share 4-2-2 house, Sagemont subdivision, S45 & S Belt 8, non-smokers, \$200/mo. Minh, x37492 or 484-2456.

Miscellaneous

Round porcelain sink, off white, ex cond, \$20. x37520.

Evenflo infant car seat, \$20; antique brass FPL set, \$15; Ping Pong table, \$50; bassinet, \$15. x38484 or 334-4124.

Free, *Popular Mechanics, Model Aviation*. 534-3021.

12 gal water tank, .5 HP pump. x30122 or 48199.

Antique table, 48" x 48", solid oak, ex cond, \$350; Walton indoor exercise bicycle, \$50; TV cart, \$10; small child's red wagon, \$18; unmounted beveled glass

mirror, 30" x 39", \$30; small arm chair, \$10. 488-5564.

Black stand for 35" TV, \$120 OBO. Quick Fix wire feed welder, 120 vac, model 117-034, includes helmet and gloves, \$395. 991-0821.

Hydroslide ProKnee board, great beginner board, \$35 OBO. Rusty, x35589 or 474-9140.

Miscellaneous baby equipment, \$5 - \$25; brown sleeper sofa, \$75. washer & dryer, \$150/ea; dinette set, \$50; coffee & end table, \$75. 488-0054.

Water skis, Cypress Gardens Pro combo, \$50; Taperflex Wide Tunnel slalom wood & fiberglass, \$100. Mark, x38013 or 992-4132.

Inlaid oak parquet end tables, \$70; 14k gold shrimp earrings, \$40. Eric, x31917.

Fisher Price high chair, \$35; Baby Tenda combination high chair/bathing table/desk, \$100; portable playpen, \$35; child bike seat, \$15, all items in good condition. Carole, 992-5031.

Concrete culverts, 5, 4' x 3" x30", \$100 as is or \$150 delivered. Andy, 280-4551 or 409-925-1586.

DP Ultra Gym Pac Fitness system, fully integrated chrome system for complete body workout, many additional features, ex cond, \$200. x31158.

Jungle gym, galvanized, \$40; 2 wheeled scooter, \$25; tire P205/75R15 w/wheel, mounted, like new, \$60; 48" fluorescent light fixture, flush mount, w/bulbs, \$15. 488-2283.

O'Brien Slalom ski, 70", with case, like new, \$120. x39814 or 480-7338.

Burgandy & blue large eelskin purses with suede lining, shoulder strap, \$100/ea; waterfilter, \$50; 18 cu ft refrigerator, needs freon, \$50. Clara, 992-7120.

Retired pieces of Tom Clark Gnomes, sell at original retail prices, perfect condition. Katie, x33185.

Used metal office chairs, swivel base with casters, cloth or vinyl upholstery, perfect for deer stands, \$5. x34108 or 332-4131.

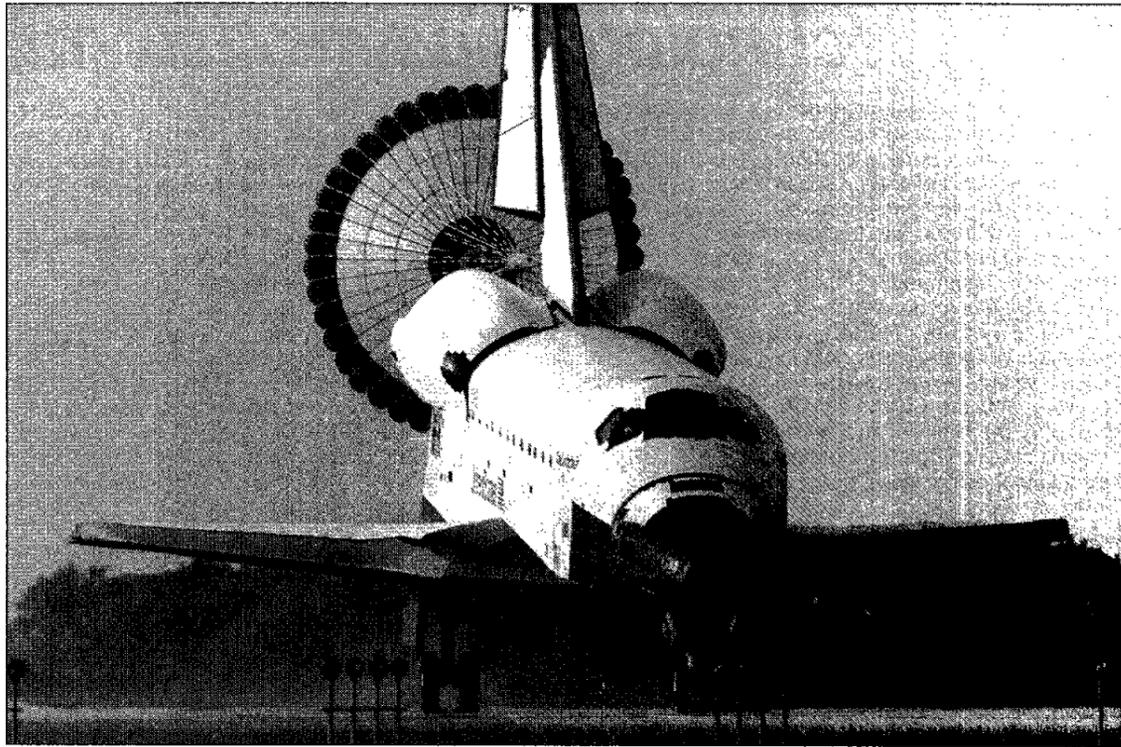
Draw-Tite trailerhitch, class II, for '88 - '92 Olds Sierra or '85 - '91 Pontiac 6000, \$50. Gary, x36219 or 486-8587.

Sinatra, 2 tickets, front row, balcony, Tues, Oct 4, 1994, 8 pm. John, x39357 or 486-5203.

Sports cards, new, Fleer Flair, \$85/box; old cards, Aikmen, Jordan, O.J., rookies, others 50% off. Duane, x36145 or 428-7419.

Removing Roughness

Resurfacing runways at KSC could help ease shuttle landing flight rules and reduce tire wear



NASA has begun resurfacing the runway at Kennedy Space Center, a move that will improve the wear on shuttle tires and potentially lead to an expansion of the return-to-launch-site landing crosswind flight rule.

Raising crosswind limits from the current constraint of 15 knots would increase launch probabilities from the spaceport on Florida's Atlantic coast. A small increase could substantially reduce the days in which crosswinds are too high for orbiters to land back at the shuttle runway at Kennedy if an emergency occurred immediately after launch.

The runway resurfacing also will improve safety for end of mission landings at KSC.

The resurfacing follows a series of successful tests with space shuttle tires and a new runway resurfacing technique using NASA's CV-990 Landing Systems Research Aircraft.

"Shuttle launches involve complicated choreography," said Space Shuttle Operations Director Brewster Shaw.

"This includes not only the conditions that apply to launching out of the atmosphere and into space, but also weather and winds at several locations around the world in case problems force us to make an immediate landing. By raising the shuttle crosswind limits, something we have studied in a very conservative and methodical way, we can enhance our capability to launch on a given day."

The LSRA is highly modified to duplicate the landing weight, speed and side slip of the space shuttle. The converted

jetliner carries a landing gear test fixture that can test orbiter tires at up to 140,000 pounds of load. It was originally developed as a space shuttle landing systems testbed, but can be used to test a variety of aircraft landing systems. The LSRA was developed and is operated by NASA's Dryden Flight Research Center at Edwards, Calif.

During the latest series of testing at KSC, the LSRA team studied three differ-

sive effort by the shuttle program to evaluate crosswind limits under which an orbiter can safely land. Tests with the CV-990 complement data which is being collected during actual Space Shuttle landing approaches. These data are being used to obtain a better understanding of orbiter handling characteristics at landing speeds in various crosswind conditions.

"If we can save the shuttle program

above their design limits...and they held up consistently beyond their rated capacities."

According to Baron, no changes are required to the tires to increase their crosswind limits.

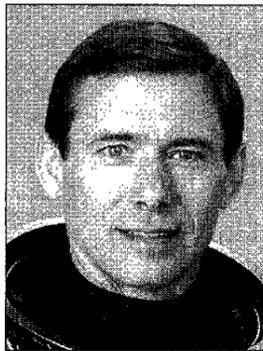
The CV-990 logged 26 flights during the most recent phase of testing at KSC, bringing the total to 101 flights since the aircraft was modified into a test facility. Along with improving orbiter landing capabilities, the CV-990 test team produced data to help update space shuttle simulators used by JSC and Rockwell International.

The CV-990 project pilot is Gordon Fullerton, who flew on two space shuttle missions before leaving the astronaut corps in 1986 to become a research pilot at Dryden.

Although testing at KSC is complete, additional flights are planned at Edwards to test shuttle tires at low air pressures and on the lakebed.

According to Baron, CV-990 project personnel are exploring possible programs with other government agencies to utilize the unique test and research capabilities of the aircraft.

Participants in the space shuttle tire testing and CV-990 programs include the JSC, KSC; the Landing Impact Dynamics Facility at NASA Langley Research Center; Landing Gear Development Facility at Wright-Patterson AFB, Ohio; B.F. Goodrich Facility at Troy, Ohio; and Rockwell International's Space Transportation Systems Division at Downey, Calif. □



'By raising the shuttle crosswind limits, something we have studied in a very conservative and methodical way, we can enhance our capability to launch on a given day.'

—Space Shuttle Operations Director Brewster Shaw

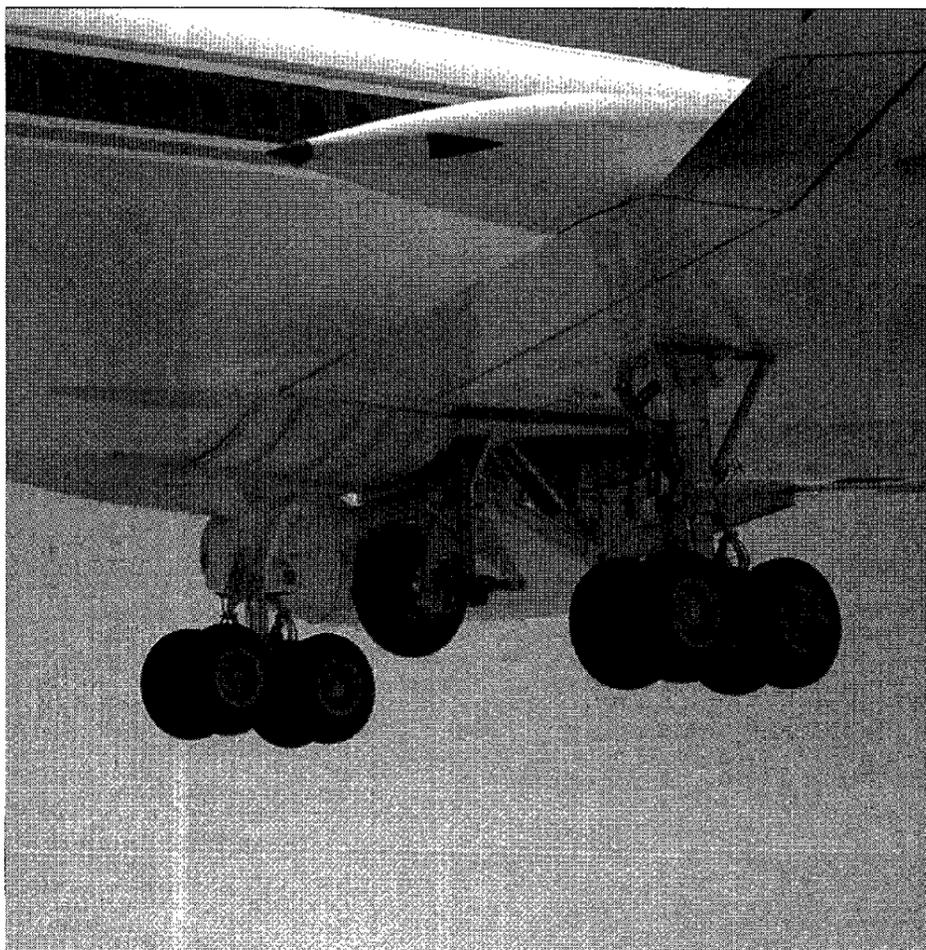
ent runway surfaces to determine the best landing conditions for the orbiter. A resurfacing technique using a Skidabrader machine was chosen and the entire 15,000-foot runway at KSC will be resurfaced.

The runway surface treatment machine, which looks like an ice rink resurfacing vehicle, propels tiny steel shot onto the runway to pulverize the rough surface and create a much smoother finish.

These tests are part of a comprehen-

sive effort by the shuttle program to evaluate crosswind limits under which an orbiter can safely land. Tests with the CV-990 complement data which is being collected during actual Space Shuttle landing approaches. These data are being used to obtain a better understanding of orbiter handling characteristics at landing speeds in various crosswind conditions.

"The orbiter and all of its systems, with the exception of the tires, were designed and built to handle a 20-knot cross wind," said Robert Baron, CV-990 program manager. "During the tests to certify them up to 20 knots of crosswind, we hit tire loads of up to 140,000 pounds...way



Top: The Space Shuttle *Columbia* lands at Kennedy Space Center's Shuttle Landing Facility at the conclusion of the STS-50 U.S. Microgravity Laboratory mission. STS-50 marked the first use of the shuttle drag chute, one of a number of improvements being made to provide greater landing flexibility for the reusable spacecraft. **Left:** A shuttle landing gear attached to NASA's CV-990 Landing Systems Research Aircraft was used to test a variety of runway resurfacing systems as engineers searched for ways to reduce tire wear and expand the window for landings in Florida. **Above:** The LSRA was highly modified to duplicate the landing weight, speed and side slip of the space shuttle.

NASA Photos

NASA technology aids medical information superhighway

High-speed information technologies developed by NASA can support physicians in remote locations on a new medical information superhighway by providing them instant access to information and treatment strategies for their patients.

The new, integrated computing and telecommunications technologies developed by NASA's Jet Propulsion Laboratory was demonstrated Tuesday before members of Congress and the Clinton Administration by the National Information Infrastructure Testbed, a non-profit consortium of corporations, universi-

ties and government agencies committed to translating the vision of a national information infrastructure into reality.

"Right now, a revolution in the way we plan and deliver medical care is knocking on our door, and NASA's going to be in the front ranks of that revolution," said NASA Administrator Daniel Goldin. "We'll merge our unique skills with those of the other major players to create innovative technology and engineering solutions."

The "telemedicine" demonstration showed how ground and satellite

communications and supercomputing technologies can help improve the delivery of critical medical care and expertise to widely spread sites throughout the country.

The demonstration simulated an emergency trauma situation in which a patient on vacation in a remote area of the Southern California desert was badly injured in an automobile accident. Satellite communications allowed a rural hospital to communicate with trauma specialists at the University of Southern California Medical Center in Los Angeles.

"Using this communications net-

work, the patient's medical records could be remotely accessed while critical medical images would be shared by specialists in diagnosing the patient's medical condition," said Edward Chow, technical manager of the telemedicine demonstration at JPL. "Real-time consultation could be carried out by teleconferencing and the patient could receive an agreed-upon treatment."

The health care consortium pointed out potential benefits of the technology to improve the quality and delivery of services, including:

- Improved analysis tools to pre-

vent expensive and sometimes unnecessary medical procedures;

- Timely delivery of lab results and expedient treatment;

- Improved collaboration of primary and specialized health care physicians; and

- Extending quality health care to underserved and unserved areas of the country.

JPL's work in the demonstration was sponsored by NASA's Office of Life and Microgravity Sciences and Applications; the Office of Space Access and Technology; and the Office of Space Science.

Halloween dinner, dance set for Oct. 29

Head for the dungeon, dust off your costumes and get ready to join your fellow spooks and goblins for the Employee Activities Association's Halloween Dinner and Dance at 8 p.m. Oct. 29 in the Gilruth Center ballroom.

Tickets for will go on sale at 10 a.m. Oct. 4 in the Bldg. 11 Exchange Store. Sales will close at 2 p.m. Oct. 26.

All-Hallows Eve begins with a social half-hour at 7:30 p.m. Dinner begins at 8 p.m. and will feature turkey and dressing, mashed potatoes, green beans, health salad, pumpkin and pecan pie.

A variety of music will be provided by 4th Wave Rhythm. Costumes are encouraged, but not required.

Tickets cost \$17.50 each and are non-refundable. Badged NASA and contractor employees and NASA retirees may purchase one table of either six, eight or 12 seats.

For more information, contact Mavis Ilkenhans at x49644.



SIGNING CEREMONY—JSC Director Dr. Carolyn Huntoon and Prairie View A&M University President Julius Becton Jr. sign a memorandum of agreement that will provide for the exchange of JSC employees and Prairie View faculty members. The agreement, signed Sept. 7, is part of an on-going program designed to enhance JSC's relationship with academic institutions in the area.

Variable schedule training available

JSC will implement a Variable Day Schedule work tour on Oct. 2, and several make-up training sessions will be available next week.

The training sessions, offered by the Human Resources Office, will be from 1-3 p.m. Tuesday in Bldg. 1, Rm. 966; 9-11 a.m. Friday in the Bldg. 30 auditorium; and 1-3 p.m. Friday in Bldg. 4S, Rm. 4419.

The Variable Day Schedule program is similar to irregular tours of duty in which employees work 40 hours per week, but not necessarily 8 hours a day, said Human Resources' Sue Leibert.

Unless they are excused, employees must be at work during certain "core" hours, which are from 9 a.m.-3 p.m. Monday to Friday, she added.

Permanent full-time and co-op employees not on an irregular tour will be converted automatically and need take no action. Employees who do not wish to be converted to a variable schedule should file a request for tour of duty with the Payroll and Travel Branch.

Permanent full-time and co-op employees who are on an irregular tour will not need to take any action if they wish to remain on their present tour. If they wish to convert to a variable schedule, they should obtain supervisor approval, then send a request for tour of duty to the Payroll and Travel Branch.

Part-time employees should discuss conversion to a variable schedule with their supervisors and human resources representatives. Temporary and intermittent employees are not eligible for the variable schedules.

Supervisors may determine that some position duties are incompatible with a Variable Day Schedule. Those who are excluded will be notified in writing this month.

All Payroll and Travel Branch requests are due today. For more information, contact your Human Resources Representative.

JSC Child Care Center hosts clothing, toy fair

The JSC Child Care Center will host its semi-annual Clothing and Toy Fair from 9 a.m.-noon Saturday at its site south of the Gilruth Center.

New and pre-owned items including infant and children's clothing, baby items, toys and maternity clothes will be available.

In addition, the center has an opening in its pre-K program for children who will be entering Kindergarten in the fall of 1995.

All civil service and on-site contractors are eligible to use the facility. A tuition assistance program is available to qualified applications. For more information, call x34734, or visit the center.

Discovery lands in California after extra day

(Continued from Page 1)

researchers got a second unexpected bonus when a volcano in the city of Rabaul, New Guinea, exploded for the first time since 1937.

Discovery's crew also successfully deployed and retrieved the free-flying Spartan -201 spacecraft.

Spartan was released from Discovery's robot arm at 4:30 CDT Sept. 13. Two orbits after its release, the satellite began its mission searching for evidence explaining how the solar wind is generated by the Sun. Helms used the shuttle's mechanical arm to grapple the satellite and bring it into its latches two days later.

Two other payloads tucked inside Discovery's cargo bay also performed well.

The Shuttle Plume Impingement Flight Experiment, another JSC-designed and

developed payload, measured the effects of the orbiter's thruster plumes at 100 separate locations. The information gathered during SPIFEX operations will help planners understand the effects of thruster plumes on large space structures such as Russia's Mir space station and the International Space Station during future shuttle docking and rendezvous operations.

The Robot Operated Materials Processing System, an experiment housed in two Get-Away Special canisters in the cargo bay, successfully processed all 100 of its semiconductor samples. ROMPS operated remotely during the crew's sleep period when vibrations were at a minimum.

Stormy weather at Kennedy Space Center caused another one-day extension and change of landing site for the six-member crew.

The orbiter landed on at Edwards Air Force Base after clouds and rain storms at the Shuttle Landing Facility in Florida forced a wave off of all KSC landing opportunities. Flight controllers opted to have Discovery spend an extra day in orbit hoping for improving weather conditions after Monday's landing opportunities to KSC were thwarted by thunderstorms and clouds.

The six member crew spent that extra day in orbit observing the Earth and studying a volcanic explosion on the island of New Guinea.

Throughout the 11-day mission, Discovery provided a stable and trouble-free platform for science activities. The orbiter is set to begin its ferry flight back to KSC Monday. Discovery will fly next on STS-63 scheduled for a February 1995 launch.

Magellan's death throes to provide gas-surface data

(Continued from Page 1)

passed all of its original mission goals and, in the process, revolutionized our understanding of a planet that represents what Earth might be like with a runaway greenhouse effect."

With its primary mission of mapping the surface of Venus successfully accomplished, Magellan has been used for a series of experi-

ments that were unanticipated before its launch. In the latest maneuver, known as the "windmill" experiment, the spacecraft's wing-like solar arrays are turned in opposite directions, like windmill sails, to encounter pressure from molecules in the upper atmosphere of Venus.

The experiment is measuring how much torque will be needed to keep the spacecraft from spinning on its

axis, said Project Manager Doug Griffith at NASA's Jet Propulsion Laboratory. These data will allow engineers and scientists to better understand basic gas-surface interactions and to gain additional aerodynamic and atmospheric data on Venus for future mission designs.

This week, more orbit trim maneuvers will lower the spacecraft's altitude to prepare for the final termina-

tion experiment. Three further trim maneuvers will change the altitude by 5 to 6 miles each on Oct. 10, placing the closest approach to the planet at 96 miles. The spacecraft's orbit will be lowered finally to 85 miles on Oct. 12, with Magellan again put in a windmill attitude to collect more atmospheric data during its final entry. Gravity data acquisition will continue until Oct. 10.

Mars lander, rover to explore Ares Vallis

(Continued from Page 1)

airbags will inflate to cushion the landing. The microrover will then roll out to examine the rocks and soil.

Both lander and rover will carry instruments and cameras. The lander will make atmospheric and meteorological observations during descent and function as a weather station on the surface, as well as a radio relay station for the rover.

The constraints on the landing site location have to do with engineering considerations, Spear said. Since the spacecraft are solar-powered, the best site is one with maximum sunshine and in July 1997, the Sun will be directly over the 15 degrees

north latitude region of the planet.

The elevation must be as low as possible, Spear added, so the descent parachute has sufficient time to open and slow the lander to the correct terminal velocity. The landing will be within a 60- by 120-mile ellipse around the targeted site due to uncertainties in navigation and atmospheric entry.

Ares Vallis was chosen after a workshop earlier this year that involved the invited participation of the entire Mars scientific community. More than 60 scientists from the United States and Europe attended.

The Ares Vallis site also is a "grab bag" location, according to

Golombek, located at the mouth of a large outflow channel in which a wide variety of rocks are potentially within the reach of the rover. Even though the exact origins of the samples would not be known, he said, the chance of sampling a variety of rocks in a small area could reveal a great deal about Mars.

Both the lander and rover have stereo imaging systems. The rover carries an alpha proton X-ray spectrometer that will examine the composition of rocks, revealing the mineralogy of surface materials and geologic processes and surface-atmosphere interactions that created and modified the surface.

For Safety or Security Emergencies

Onsite 483-3333

Ellington Field

Fire 244-7231

Ambulance 244-7231

Security 244-3333

Safety Action Hotline

483-7500

Office of the Director

Safety Hotline

for personal, confidential, or anonymous reporting

483-1234

Correction

A story and graphic in the Sept. 16 issue of Space News Roundup listed an incorrect telephone number for the Safety Action Hotline at JSC.

The correct number is 483-7500.

Space News Roundup

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